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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/832,232	04/10/2001	Tomohiko Yamamoto	55801 (70904)	8972

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EXAMINER

NGUYEN, FRANCIS N

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 08/13/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/832,232

Applicant(s)

YAMAMOTO ET AL.

Examiner

FRANCIS NGUYEN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2003 and 03 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34, 36 and 37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 2-13, 16, 17, 19-22, 24-34, 36 and 37 is/are allowed.
- 6) ☒ Claim(s) 1, 14, 15, 18 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 21 April 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. The amendment filed 4/21/2003 is entered. The Information Disclosure Statement filed on 7/03/2003 has been considered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. Claims 1, 14-15, 18, 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Yanagi et al. (U.S. Patent 6,359,607).

As to **claim 1**, Yanagi et al. discloses a method for driving an image display device (column 2, lines 15-22) which includes a plurality of pixel electrodes (pixel electrode 103, column 1, lines 34-35) which are formed on a substrate (**electrode substrate**, column 1, lines 24-26) , pixel switching elements which are individually connected to the pixel electrodes (**switching element 102 composed of TFT connected to pixel electrodes**, column 1, lines 33-36), a plurality of signal lines for applying a data signal according to a display image (**plurality of signal lines S(1) through S(n)**, column 1, lines 27-29, figure 9, **image signal voltage Vsp** as shown in figure 12, column 2, lines 27-28) to the pixel electrodes, and a common electrode for applying a common potential to pixels (**counter electrode has a potential set to potential VCOM** by

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counter electrode driving circuit COM , column 2, lines 32-34, figure 9), said method controlling a voltage applied to the pixel electrodes (**pixel potential Vdp** as shown in figure 12, column 2, lines 30-32) in a conduction period of the pixel switching elements (**scanning voltage Vgh applied to a gate electrode, TFT attains ON state**, column 2, lines 23-29) according to a pulse width supplied to the signal lines (**pulse width waveform Vs with voltage level Vsp shown in figure 12**), wherein the voltage applied to the pixel electrodes is less than a voltage supplied to the signal lines (**pixel potential Vdp is less than potential Vsp by a level shift delta Vd as shown in figure 12**), and the voltage applied to the signal lines is determined to be higher than a desired charging voltage required for the pixel electrodes (aforementioned image signal voltage Vsp is higher than pixel potential Vdp as shown in figure 12) so that the voltage applied to the pixel electrodes becomes a desired value (desired voltage Vdp). Therefore, the ground of rejection is maintained .

As to **claim 14**, Yanagi et al. discloses a method for driving an image display device (**matrix-type liquid crystal display**, column 1, lines 5-9), said method displaying tones by modulating a pulse width of a two-value voltage (pulse width with Voltage Vsp and Vsn, shown in figure 12, applied to signal electrode S(i) shown in figure 11) supplied to signal lines, wherein an amplitude of scanning lines is varied (**amplitude is varied between Vgh, Vgl** and when TFT switches On/Off , column 3, lines 38-49) between positive application for applying a voltage to a positive side and negative application for applying a voltage to a negative side(aforementioned Vsp and Vsn) . Therefore, the ground of rejection is maintained.

As to **claim 15**, the method as set forth in claim 14(see the same citation for claim 14) wherein a difference in amplitude of a voltage supplied to the scanning lines is equal to an amplitude of

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a voltage supplied to a common electrode (**counter electrode is biased with voltage V_{com} so that level shift ΔV_d decreases**, column 2, line 67 through column 3, line 1). Therefore, the ground of rejection is maintained.

As to **claim 18**, Yanagi et al. discloses a driving device of an image display device (column 2, lines 15-22) which includes a plurality of pixel electrodes which are formed on a substrate (**electrode substrate**, column 1, lines 24-26), pixel switching elements (**switching element 102 composed of TFT connected to pixel electrodes**, column 1, lines 33-36) which are individually connected to the pixel electrodes, a plurality of signal lines for applying a data signal according to a display image (**plurality of signal lines $S(1)$ through $S(n)$** , column 1, lines 27-29, figure 9, **image signal voltage V_{sp}** as shown in figure 12, column 2, lines 27-28) to the pixel electrodes, and a common electrode for applying a common potential (**V_{com} applied to counter electrode shown in figure 9**, column 2, lines 32-34) to pixels,

said driving device applying a voltage between a potential of the signal lines and a potential of the common electrode (**voltage V_d applied at pixel electrode as shown in figure 11**) when a potential of scanning lines is ON (**scan pulse V_g within period $TF1$ shown in figure 12**), and displaying tones by modulating a pulse width of a two-value voltage supplied to the signal lines (**voltage V_s applied to signal lines shown in figure 12**),

wherein said driving device includes a signal line driving section (signal line driving circuit 200 shown in figure 9, column 1, lines 42-44) for supplying a voltage, not less than a voltage supplied to the pixel electrodes (**V_{sp} is greater than V_{dp} shown in figure 12**), to the signal lines so that the voltage applied to the pixel electrodes becomes a voltage taking into

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account change of an optimum counter voltage according to display tone (aforementioned voltage V_{sp}). Therefore, the ground of rejection is maintained.

As to **claim 23**, see same citations for claim 18 since claim 23 differs only from claim 18 as to the scope of an image display device versus driving device of an image display device. Note Yanagi et al. teaches an image display device (LCD display device, column 6, lines 6-8). Therefore, the ground of rejection is maintained.

Allowable Subject Matter

4. Claims 2-13, 16-17, 19-22, 24-34, 36-37 are allowed over prior art

Response to Arguments

5. Applicant's arguments filed on 4/21/2003 as to claims 1, 14-15, 18 have been fully considered but they are not persuasive.

As to claims 1, 18 and 23, Applicant's argument as to Yanagi et al. failing to teach a methodology in which the voltage applied to the pixel electrode is lower than the voltage supplied to the signal line, during the conduction period of the switching element is not valid because Yanagi et al. does disclose voltage applied to pixel electrode is lower than the voltage applied to the signal line (**pixel potential V_{dp} is less than potential V_{sp} by a level shift ΔV_d as shown in figure 12**), **TFT attains ON state** (column 2, lines 23-29) corresponds to the claimed conduction period of the switching element. Note also that voltage supplied to signal lines has to be inherent higher than voltage at pixel electrode (point at lower potential) because of voltage drop (current flowing through wire resistance, transistor being used as switch). Therefore, the ground of rejection is maintained.

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As to claims 14-15, Applicant's argument as to Yanagi et al. failing to teach amplitude of signal lines are different between the positive application and the negative application is not valid because claim language is "amplitude of scanning lines is varied" (Amendment, claim 14, lines 4-5) and also Yanagi et al. discloses that **amplitude is varied between V_{gh}, V_{gl} (figure 12)** and when TFT switches On/Off (column 3, lines 38-49, column 16, lines 46-58). Note that Yanagi et al. discloses liquid crystal requires alternating current drive (column 2, lines 17-19), implying signal voltage polarity change; this corresponds to the claimed amplitude of signal lines different between positive application for applying a voltage to a positive side and negative application for applying a voltage to a negative side (aforementioned V_{sp} and V_{sn}). Therefore, the ground of rejection is maintained.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

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7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 6,590,552 Yokoyama et al.

Reference Yokoyama et al. is made of record as it discloses a method of driving a liquid crystal device requiring less current and power consumption is reduced.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Francis Nguyen (8:00AM to 4:30PM) whose telephone number is (703) 308-8858.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard Hjerpe**, can be reached at (703) 305-4709.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

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FRANCIS NGUYEN

Examiner

Art Unit 2674



August 8th, 2003



RICHARD WIERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600